tridges, bearing what is called a "steel" point, are considered superior to soft point shells. 4-11
The former are said to kill quicker and this especially recommends them for use against an 813
animal like the grizzly bear. "Go right clean through," Nitla said, explaining the force of the steel tipped cartridge. A soft point shell, on the other hand, may be stopped if it strikes bone. It is understood that the point of the cartridge must be neither too long nor too heavy, else it will lose in distance, dropping low. Beyond this there is no interest in ballistics.

Constant watchfulness is exercised in the handling of guns. A loaded gun will never be 411
used to test ice or as a walking stick nor are .22's kept around camp with a loaded chamber. Fourteen year old Donald Suza expressed disapproval of the ethnographer keeping a loaded .22 in the cabin. "What for you load gun?" he demanded. Asked if this was not good sense, he replied: "Yeah, no good."

Most young men are capable of making repairs on a gun, such as adjusting the sights or 411
sawing down the barrel and constructing new sights. Testing the firing power, range, and 524
trajectory of rifles is one of the reasons for target practice. Much of this firing, however, is not designed to test the weapon but rather the shooter's marksmanship. Target practice is never seriously competitive. Girls were not observed to use guns for this purpose in camp. According to Old Man, however, girls are apt to target shoot when in the bush. Older men tend to condemn this shooting as wasteful. Old Man mildly scolded Donald Suza for target practice. "What you want to shoot water for? You can't eat water." But both Old Man and Old Kean admitted to target shooting in their youth.

Tools. Certain essential tools are found in every household. Women's tools include 412
scissors, needles, thimbles, and steel awls. A married woman generally owns her own ax, 413
butcher knife, file, and tanning tools. The latter include a metal scraper, used to remove hair
from moosehide, and a skin softener. Scrapers are manufactured by men from discarded files. 281
The handle of the file is removed and the metal pounded flat on both ends. The flaring ends are then bent in opposite directions and sharpened. The center of the tool is wrapped in cloth or moosehide to provide a grip. The skin softener is prepared from a piece of green wood eighteen inches long and about three inches in diameter. The surface is rounded and smoothed along most of the stick. One end is split and a thin stone, about three inches long and chipped to a thin edge on one side, is inserted. This end is then bound tight with a strip of canvas or moosehide and lashed with cord. Men's tools include the long handled ax, knife, hammer, awl, T-square, drill, plane, and file.

Each sex keeps its own tools in repair and cutting tools like the ax, knife, and scissors 412
are always found well sharpened. Sharpening is done with a six or eight inch file, care being 413
taken to always sharpen blades on axes in such a manner as to avoid a ridge and secure a gently tapering thinness which will assure a deep cut and prevent dangerous glancing. Certain tools are found in almost every winter settlement and may be used by both sexes or by more than one family: the one man crosscut, whip, and Swedish type buck saws, shovel, rake, pick, and mattock. Ownership of a carpenter's rule or measuring tape was not observed. Men sometimes make measuring sticks out of a straight length of willow. This is 804
axed off sharply at one end and laid against the object to be measured, the sharply cut end against one end of the object. At the opposite end of the object the stick is notched and again sharply cut off. The size of the pole now corresponds to the object measured and is

wives and children. A limited number of snares constructed of wire cable are also purchased 224
by most families.

Fur destined for commercial channels is dried on fur stretchers. The several kinds of 417
stretchers may be classified into two types, those used to stretch fine winter fur and those 322
used for beaver skins. Winter fur stretchers are of two sub-types. The first, which may be
designated as the keel variety, consists of a flat board known as the stretching board or 281
mould. The dimensions vary according to the pelt for which they are designed. Cut from the wood of a packing case or a piece of hewed poplar or spruce, a keel stretcher for mink is about fifteen inches long, three inches in its greatest width and about a quarter of an inch thick. The edges of the board are crudely bevelled. The foreward portion of the mould tapers sharply for an inch or so to hold the head of the skin being stretched. The keel for a mink stretcher consists of a piece of wood somewhat shorter than the length of the stretching board, half an inch thick, and two inches in its greatest width (Fig. 3, D, a). Along one side of its width the wood is perfectly level. In use this side of the keel is placed on top of the mould. Once inserted in the pelt with the pointed end under the head, the keel is lifted from the stretching board with a wedge consisting of any piece of wood about four inches long, an inch wide, and an inch thick.

The second sub-type of winter fur stretcher may be designated as the keelless variety (Fig. 3, D, b) and consists of two moulds separated by a wedge. These stretchers are used for furs like lynx, fox, coyote, wolverine, and wolf. Two pieces of hewed spruce about one and one quarter inches thick are used in the preparation of the mould. They are finished with an ax and planed smooth. For coyote and lynx skins each board is about six feet long and five to six inches across at the widest portion. The upper portion of each board tapers to a sharp point for about the foreward three inches. The rest of one side is gently rounded. The other side is level for about three quarters of the length. The wood is then sharply rounded to provide a handlelike end about a foot long. These boards are inserted into the skin so that the level sides are together. Between them is inserted a wedge, four feet long and tapering to a sharp point from a width of about four inches. The wedge forces the stretching boards apart thus spanning the skin. Including the time occupied in finding a suitable tree and hewing the lumber, about four hours are required to make a pair of these moulds.

A beaver stretcher is made by bending a green black spruce sapling, about seven feet long and an inch and a half in its widest diameter, into a half oval. A crosspiece, consisting of a spruce pole four feet long is lashed across the open end of the oval. The skin to be stretched is lashed to the stretcher with fine babiche, small holes being cut in the pelt's rim about two inches apart.

The frame used in cleaning moosehide is made by providing a ridge pole about twelve feet long and three or four inches in diameter. One end of this pole is lashed or nailed to a tree at a point about twelve feet from the ground. The other end is generally supported in a forked stick or may also be lashed to a nearby tree. Two poles three inches in diameter and about ten feet long are tied to this ridge pole with their lower end resting on the ground in a forty-five degree angle. The space between these poles is somewhat greater than the

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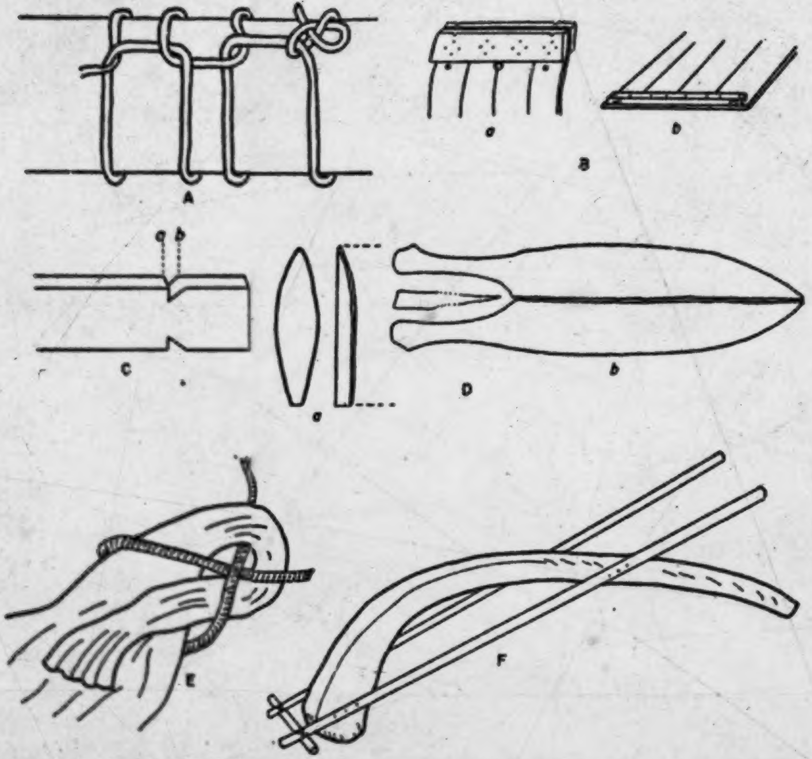

FIG. 3. Kaska Manufacturing Techniques: A, Hammock hitch for ax handle; B, Toboggan construction; C, Notched lumber; D, Stretchers for fur; E, Sheep bend for tarp; F, Bending frame for green lumber.

hide which is to be cleaned. Another pole is placed across the lower portion of the horizon- 417
tally leaning poles and lashed in position. The skin is then perforated and fastened to the 322
frame. When hides are to be softened, they are fixed on a smaller frame, consisting of four 281
poles, in which the side poles are anchored in the ground perpendicularly (Pl. 8, D).

Construction of most apparatus and all tool making is done by men. Young girls some- 462
times make stretchers for squirrel skin and women commonly erect the poles for stretching
and softening moosehide.

Machines employed by the Kaska have either been purchased from traders or adapted [439]
from white sources. Among the machines in the former category are sewing machines,
owned by women but purchased by men, and outboard motors, the property of men. A 404
pulley is a common possession and in the fall is used in conjunction with an improvised 401
winch to pull boats out of the water. The winch is made by driving two poles about four 406
inches in diameter and five feet long into the ground about six feet apart. Each pole is
grooved on the side which is away from the water and about six inches from the top. A
smooth green pole, about four inches in diameter, is fitted into these grooves to serve as a
winch. The pull of the boat is sufficient to keep the winch from slipping out of the grooves.
A handle is made by lashing a green spruce pole, about two feet long and two inches in
diameter, at right angles to the winch.

Every household uses such cooking utensils as frying pans, straight kettles varying in 415
size from one to five quarts, coffee pots, bowls, plates, cups, silver plated spoons and forks, 251
wash basins, and washtubs. A few families have also accumulated china cups and dishes.
Bottles and jars are generally saved for storing homebrew and may also function as baby
bottles, candlesticks, and sugar bowls. The fifty pound drums in which dehydrated milk is
purchased are used to store rice and flour. Empty sugar and flour sacks are widely used to
contain tea, rice, meat, and many other commodities. Discarded oil tins are used for storing
gasoline and kerosene.

Domestically manufactured utensils include moosehide gun cases, embroidered with 415
silk thread, needle cases, made of scraps of cotton cloth, sewing kits of velvet fitted with 281
pockets and embroidered with silk thread, and envelopes of birch bark containing sinew
line or pounded beaver castors.

Productive capital. In general the producer goods needed by an individual or family, 471
both home constructed and purchased, are found in every settlement. Thus each family is
in an equal position to secure or create necessary consumer goods. Even if an object is not
owned by an individual, it may generally be borrowed from others within the winter
settlement or from nearby neighbors. If not immediately required by the owner, such articles
are readily loaned, and rent is rarely or never demanded. If an outboard motor is loaned, the
borrower is only expected to supply his own gasoline. When dogs are loaned, it is with the [501]
sole stipulation that they will be reasonably well fed and otherwise cared for. In short, the
necessary productive capital is widely distributed or generally accessible.

EXPLOITATIVE ACTIVITIES

During nine or more months of the year, from the middle of August till late in May, the 221
Kaska Indians are actively occupied in exploiting the resources of their sub-Arctic environ-

283 thumb, pulled free, and set aside. When these loose strands have been exhausted, the worker using her fingernails, picks strands away from the block and then strips them free. This continues until the entire block has been separated into individual strands of line. Each of these strands is now placed on the woman's knee and twisted. This is done by moistening the flat of the fingertips with saliva and using them to rub the sinew strand toward the body of the worker. The ends of each strand are then twisted by twirling them between the moistened thumb and index finger. The strands are preserved for sewing moccasins and [462] mittens. All line is manufactured by women. In addition to native cordage, people use manila rope, sewing thread, brass wire, and insulated copper cable for sewing and lashing.

284 The principal knots used are simple ones and include the single and double overhand, the "choker" or running noose, the slip hitch, and the weaver's knot or sheet bend. The running noose is used to fasten stones, used as sinkers, to a fish net. The slip hitch is widely used when a knot is required which can readily be opened. It is employed, for example, to tie tent ropes to guy posts or to hang up bags of food. The sheet bend is used to secure two ends of line and is also employed to fasten a length of line to the corner of a tarp (Fig. 3, B). The split handle of an ax is sometimes bound together with babiche applied as a marline or hammock hitch (Fig. 3, A). When a moosehide or beaver skin is lashed to a stretcher it often secured at the beginning with a lark's head or cow hitch. This knot is also occasionally used in beginning the filling of the center panel of snowshoes. Women also braid a woolen line from yarn, making a four strand sennit braiding which is used to hold mittens around the neck.[8]

● 281 *Skinwork*. Two types of skinwork may be distinguished: the skinning and stretching of fine furs designed for commerce, and the skinning, stretching, and tanning of moosehide and caribou hide used in domestic manufactures.

Fur bearing animals, which are trapped or shot, are usually brought into camp before being skinned. In skinning a small animal, such as a squirrel, weasel, mink, or muskrat, the animal is placed on its back, the hind legs outstretched. With a sharp pocket knife, a cut is made at the extremity of one of the rear legs extending through the skin to the muscle. The cut is continued up the leg, across the undersurface of the body and to the pads at the lower end of the other leg. In making this incision, care must be taken not to cut through the muscle tissue and expose the viscera. The cut passes anteriorly to the anus and male genitals. After the cut is completed the animal is seized by one of its hind legs and the index finger of the other hand inserted between the skin and muscle tissue at approximately the second joint. Using the finger, the skin is loosened all around the leg at this point. When this is done the skin is stripped away from the lower portion of the leg and paw. The same process is repeated on the opposite hind leg. The skin is now pulled away from the upper portion of each leg. Upon reaching the body, the finger is inserted under the skin to loosen it from the lower region of the animal's back. A second cut is then made extending in a semicircle from the first horizontal cut posteriorly around the male genitals and anus. Following this incision, the index finger is again inserted between the skin and the back muscle of the animal and worked toward the tail. Upon reaching the tail, the finger joins the thumb to pull the cartilage from the tail skin. The animal is then grasped by the hind legs and the skin stripped away from the rest of the body, up to the ears, in a few swift pulls. When the head is reached considerable cutting is necessary before the skin can be successively removed at the ears, eyes, and mouth. The skin is removed with the undersurface of the pelt exposed. In this condition it is now mounted on a stretching board (or mould) and any tears or bullet holes mended with needle and thread. The rear legs are tied to the stretcher with a few turns of babiche or cotton cord; the tail is left free. The keel of the stretcher is inserted below the belly surface of the pelt and supported from the stretching board by a scrap of wood about an inch high. Small skins are left to dry outdoors for about three hours. The pelt is then reversed on the board and left indoors for a day or two of further drying.

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[8] See Graumont and Hensel, *Encyclopedia of Knots* (1942), 204; pl. 112, Fig. 2.

Larger fur bearing animals are skinned in the same general way except that severing the pelt from the underlying muscle tissue becomes a much slower task, requiring constant cutting. At almost every half-inch, the skin must be freed from the muscle tissue with the aid of a sharp knife. Large skins are dried on keelless stretchers, short sticks of wood being inserted into the forelegs and supported by wedges to hold the legs extended. The pelts are left to dry for several days.

Beaver skins are stretched and dried by being lashed on a semicircular stretcher through holes cut along the outer edge of the pelt. Babiche is used for this lashing. The skin is dried outdoors for several days. In drying skins outdoors care must be taken lest stray dogs discover the fur and try to eat it. For this reason stretching skins are often kept on a roof.

Skins are stretched as large as possible. Either a man or woman may skin and stretch fur; generally the work is done by the person who trapped or shot the animal, even adolescents skinning and preparing skins which they catch. Dry skins are rolled up but not folded, as this would damage the fur.

Raw fur pelts to be used for trimming personal garments, are usually tanned. The inner surface of a skin is rubbed with bear grease and left to soften. At the end of about a year the pelt is soaked in water and hung out to freeze and slow dry. When half dry, it is brought back into the house to thaw and finish drying. The skin is then softened by scraping the inner surface with a chipped stone softener.

The first step in the preparation of tanned moose or caribou hide is the fleshing of the skin after it is removed from the animal. This process removes any shreds of muscle tissue remaining on the hide. The skin is roughly cleaned of flesh on the woman's knee, the worker using a butcher knife. When this has been done, holes are gashed along the sides of the skin and it is then lashed to a stretching frame. Two women may now cooperate in the fleshing. The workers sit or kneel on the lower end of the hide, partially supporting their weight on the bottom log of the stretching frame. Six inch, keenly sharpened, butcher knives are used. The worker holds a piece of flesh between her thumb and index finger and cuts it loose from the underlying hide. When it is cut free the fingers take another hold. The cuts are carefully made, the woman sometimes pressing down on the back of the knife blade with one hand to guide the instrument's pressure as it slices pieces of muscle free from the hide (Pl. 8, A). The knife is constantly cleaned during this process, by being wiped on a cloth or scraped against the poles of the stretching frame.

After the hide has been fleshed, generally on the following day, it is reversed on the

28 stretcher for the next step, scraping, which removes the hair from the animal's skin. The hairs are cut short by holding them away from the hide with the fingers and then cutting with a sharp butcher knife. This is first done on the lower half of the skin. The upper portion will be cleaned when the lower hide is completely scraped of hair and the skin turned around. Following the preliminary cutting, the short lengths of hair remaining are scraped away from the hide (Pl. 8, B). The scraper is held in both hands, the work being done with powerful downward pulls on the tool.

When the skin has been cleaned, the sides containing the lashing holes are trimmed of and used in the preparation of babiche. The hide is then thrown across poles and allowed to dry for a day or two high above a smudge fire. Now the softening process begins. This [237] consists in soaking the hide in a mixture of moose brains (which have been allowed to decompose for a week or so) and hot water. The mixture is prepared in a dishpan and left to stand for a day or two. Baking soda may be added to soften the water. The hide is soaked in the mixture for two nights. After that time it is removed and the moisture forced out of the [417] material by wringing the skin with the hands. Selecting a spruce stump, about three inches in diameter, the woman trims the uppermost eight inches of the wood leaving a section about one inch in diameter. Holes are cut in one side of the hide and these are fitted over the peg. Holes cut on the opposite side are placed over a pole three feet long and an inch in diameter. Holding this pole the worker twists the damp hide, squeezing it free of moisture. She continues this process for about an hour, the hide then being left overnight with the pole lodged behind the stump. The next day the hide is untwisted and the pole removed. Grasping the hide along the free edge, the woman pulls in order to stretch it as far as possible. The skin is then removed from the stump and spread over a horizontal pole to dry. When dry it is again soaked for two nights in the moose brain mixture and again wrung out, stretched, and dried. A third soaking, wringing, stretching, and drying follows.

The skin is now again lashed to a stretching frame and softened by being scraped with a chipped stone or a dull ax blade set in a wooden handle. This softener is grasped near the stone with one hand, while the other hand holds the opposite end of the stick. The stone end is then rubbed against the hide with as much pressure as possible (Pl. 8, B). A portion of skin is scraped until all trace of the dull yellow color is removed and the hide shows a snowy white. First the upper portion is scraped, the hide then being turned around in order to duplicate this process for the lower portion. Softening a hide may be carried on for two days, the worker, sometimes with the help of her sisters, working about four hours a day. When the skin is as soft and pliable as a blanket it is ready for the final smoking (Pl. 8, c). In preparation for this, the skin is sewn into a tube about two or three feet wide and six or seven feet high. The top is also sewn together. The tube is supported with a tanned skin line from a pole or a group of poles. Underneath it a smudge is created in a shallow hole surrounded by sticks to keep the tube open. The hide is left hanging over this smudge until the interior has acquired a deep yellow-brown color; it is then reversed and the other side smoked. The tanned hide is now opened up and hung over a horizontal pole in the house to dry, after which it is ready for use.

The general process of tanning a hide may run over two or three weeks or even seven months. Several days are occupied in simply waiting for the hide to dry following various 281 ● steps in the process. The most difficult part of the work lies in removing the flesh and hair. Two women can do this in about ten or twelve hours. A family will sometimes purchase a hide which has been fleshed and cleaned and then finish the tanning; such a skin sells for from six to eight dollars. Each softening of the hide takes two people about eight hours. The final smoking must be carefully watched and, depending on the size of the skin, occupies from forty-five minutes to an hour and a half. A fully tanned moosehide represents about fifty work hours; a small caribou skin, somewhat less time.

Fire. Two general types of fire may be distinguished, fires made in stoves and campfires 372 built outdoors. Stove fires are built from small dry kindling split from a section of log and shaved toward one end with a knife. After the kindling has caught, larger sections of cut wood are added. Outdoor fires are generally built with kindling obtained from the dry small limbs found toward the bottom of spruce trees. A large double handful of these twigs is collected and thoroughly broken into small bits. Larger wood is also collected and set to one side. After the kindling has been well broken up, so that it forms a compact mass, it is ignited. When the fire is well caught, the pile of brush may be tipped over from behind and lightly pressed down. Now larger sticks are added. In winter, snow is first cleared from a fireplace before a blaze is set, and a thick layer of brush placed on the ground in front of the fire to prevent moccasins from becoming wet in the melting snow (Pl. 7, D).

People are very much at ease around open fires, readily passing things over the flames and handling hot sticks without any sign of timidity. When working outdoors in fall or winter, men and women generally build fires behind them to keep warm. In standing or sitting around an open fire, people keep their backs to the blaze. If they face the fire, as sometimes becomes necessary, they look over rather than into the flames. This habit avoids the temporary blindness that follows prolonged, nocturnal exposure to bright light. To keep wind from fires, a tarp is sometimes erected on the windward side. In cold weather such protection has the additional function of directing the heat of a fire into the camp. Prevailing attitudes, expressed by men and women, tend to emphasize the smoke, draft, and other inconveniences associated with open fires as compared to stove fires. Smoke is regarded as detrimental to children's health. There is also the fear that children may burn themselves playing around an open fire.

Heavy smoke fires for smoking hides are made from rotten spruce wood which may be 372
mixed with a little green spruce brush. Green spruce brush and green wood are collected 281
for the light smudges used to keep flies off drying meat or for the preliminary smoking of 251
hides.

Care is always taken to prevent campfires from spreading. A shallow trench is dug 372 around the embers with the toes or with a stick, and the loose dirt kicked into the coals. Damage to dwellings from fire is not an unfamiliar experience to the people. Tent fires are especially common; three occurred during the period of field work. Two of these blazes were caused by candles being left too close to the roofs of wall tents while the occupants went to sleep.

Kerosene lamps and candles are in common use and a few families also own Coleman 373

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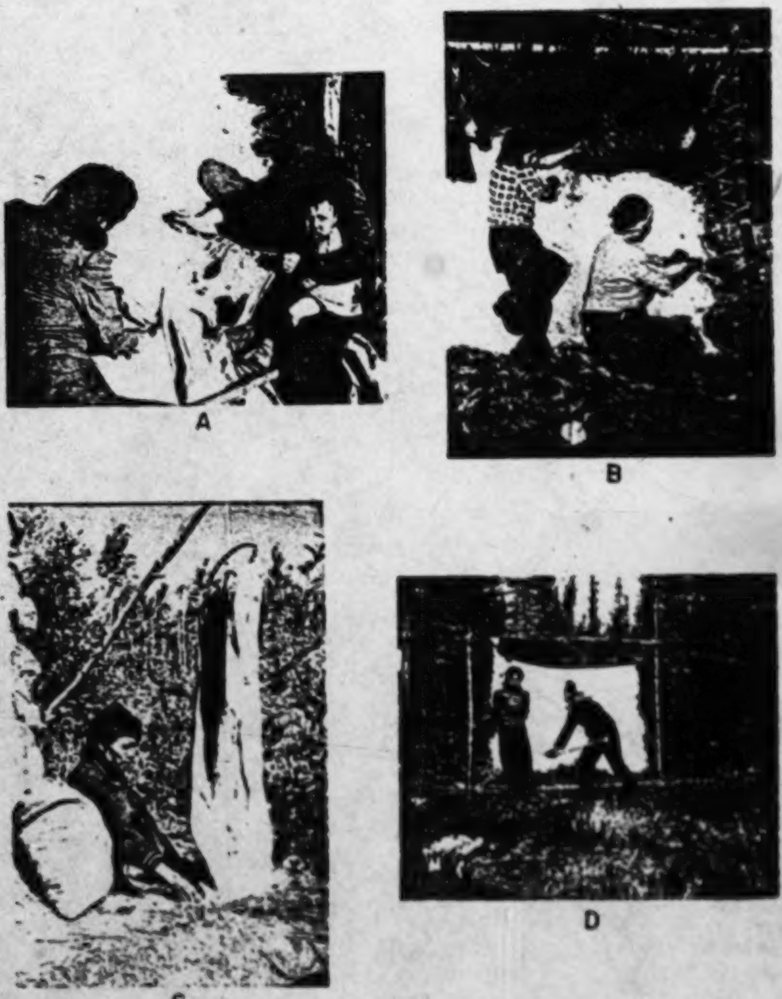

Processing Hide

[END PLATE 8]

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ND12 Nahane ND12

[For uses of skins, see categories 291, 352, 415, and 482.]

Upper Liard

321 412 bone splinters. Needles with eyes appear to have been manufactured prior to contact, their use being aided by a "thimble" consisting of a flat piece of bone held in the palm. The bone arrow points will be described in connection with weapons.

As already indicated, horn from mountain sheep, goats, and caribou found a place in the technology. To prepare spoons and blades from goat or sheep horn the material was boiled until soft, split with a stone ax, and then shaped with a stone knife. Without previous boiling, caribou horn could be sharpened (by grinding ?) to provide an adze or scraper with an edge sharp enough to cut through the hairs on a caribou hide. The sharp point of a caribou horn made a useful tool for drilling through wood. Another drill consisted of a beaver tooth mounted in a wooden handle.

322 412 Although objects of wood and bark played important roles in daily living, woodworking remained a relatively undeveloped industry carried out with simple apparatus. Spruce appears to have been the most frequently used wood. The available cutting tools made it relatively impossible to cut down any tree larger than a sapling so that older trees had to be weakened by firing the base. Then came the problem of cutting [301] the trunk into planks of desired length and thickness. A felled tree was split with a birchwood wedge driven with a maul made by hafting a heavy stone in a wooden handle.[9] In the course of using a maul of this type a man sometimes chanted "gu guk, gu guk," the charm urging the lashing around the head of the maul to remain strong and not to loosen. Fabrication of the resultant planks into snowshoes, snow shovels, handles, [314] and other objects demanded use of the cutting tools previously described. Spruce bark provided a variety of objects ranging from canoes to drinking and storage vessels. Large pieces of bark were often peeled by a skilled man who, after selecting a suitable tree, climbed into it on a ladder consisting of a spruce sapling leaned into the branches. After clearing the trunk of branches he cut a girth around the tree with a caribou-horn adze. He then split the bark lengthwise for about four feet and peeled it free from the trunk with a wooden barking tool fitted with a crook. This implement partly encircled the tree under the bark. The loosened rind was tied in place around the trunk with babiche line while the worker lengthened the split downward by cutting. This continued until the bottom of the tree was reached. Here another girth was cut and from the ground several men now pulled the strip fanwise from the tree. The lashing at the top of the piece had been left loose enough to permit the large sheet to gradually slip down as the men drew the lower edges free. White birch bark, scarce along the upper Liard River, found little place in technology.

● 281 From the pelts of slain animals the people secured garments, sleeping robes, and storage bags. First, however, the skins had to undergo processing to render them fit for these purposes. Fur covered pelts required thorough fleshing after which they were dried and perhaps stretched. Beaver skins were dried and stretched on oval frames of willow very similar to the type still in use. People stretched lynx, fox, muskrat, and similar pelts, peeled whole from the animal's body, over form boards that slipped into the skins. Rabbit skin, intended for cutting up into plaiting line, could be best dried

[9] Hafted stone sledge hammers as well as plain wooden mauls are specified to have been made by the Tlingit. Drucker, *Culture Element Distributions: XXVI, Northwest Coast* (1950), 183.

6: Honigmann E-5 (1943-1945)1954 ND12 Nahane ND12

Upper Liard

in cold weather. The tanning of caribou, goat, and moose hide involved a relatively more complex process to which women devoted considerable time.[3] First the skin needed to be scraped clean of flesh and fat with the aid of a bone fleshing tool. Next greater muscular effort had to be applied in wielding the horn scraper with which to free the hide of hair. The woman then rubbed a mixture of brain and water into the skin and left it to soften.[4] Afterwards the hide must be washed and then twisted or wrung out to remove the excess moisture, dried in the sun, and stretched. Thereupon came the labor of softening, accomplished by scraping the spanned white hide with a long handled stone scraper. A second or third brain soaking and scraping followed. Now the skin could be sewn into a tube loosely closed at the end from which it was suspended for an hour or so over a smudge fire kindled with rotten spruce wood. When the inside had been thoroughly smoked the surfaces were reversed and smoking continued for about another hour. The result appeared in a golden yellow skin which the worker suspended in the sun to dry and then fabricated into containers and tailored clothing. The dried whole skin of a large fish (probably loche) provided material for a bag widely used to store sewing materials. 281

Line ranked as an indispensable requirement in aboriginal times. Material used in line making included sinew, caribou hide taken at various stages of the tanning process, spruce root, whole willow, willow bark, willow root, and grass. Fish skin, willow bast, and spruce wood do not appear to have provided material for cordage. Sinew line originated along the backbone of a caribou or, in emergencies, from the tendons of mountain sheep and goats. A woman scraped the sinews clean of flesh with a knife and hung them overnight to dry. On the following day she flexed and loosened a bunch by grasping the upper and lower ends with the hands and rotating the mass in opposite directions. The process separated the individual strands which could then be stored until needed. Before being used the sinew was moistened by drawing individual strands through the mouth thus rendering them soft and pliable. From caribou hide came rawhide, babiche, and smoked (or tanned) skin line. Rawhide designates a skin from which the hair and flesh have been removed but which has not been treated with the brain mixture. Such skin provided a strong cordage difficult to untie once it had dried and hardened. Ordinary babiche (semi-tanned skin) line generally came from the skin of a bull caribou. Bear skin provided the strongest variety of this type of line while mountain sheep skin yielded a particularly fine babiche highly desirable for filling the front and rear panels of snowshoes. More often "fine" babiche came from the hide of a cow caribou. Hide to be used in the manufacture of semi-tanned skin cordage had been fleshed, cleaned of hair, and softened. It might be dyed in moose blood if the maker fancied the deep rusty color. Newly cut babiche was stretched between two trees and left to dry for 24 hours 283 [286]

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[3] For fairly detailed descriptions of skin working observed in contemporary Kaska setting see Honigmann, *Culture and Ethos of Kaska Society* (1949), 59, 76-79. Skin working among other Northern Athapaskans is illustrated in Leechman, *Caribou for Chipewyans* (1948), and the same writer's *Painted Skins* (1948).

[4] The Tlingit (including the Chilkat) used brains as a tanning mixture, while southerly tribes on the coast tended more to use salmon roe and oil. Drucker, *Culture Element Distributions: XXVI, Northwest Coast* (1950), 196.

6: Honigmann E-5 (1943-1945)1954 ND12 Nahane ND12

Upper Liard
Dease River

283 in warm weather but for a week during winter. Summer babiche broke easily in comparison to the winter variety. Cold weather drying also rendered the line softer and more flexible. Stretching frames for drying babiche were not generally used, although for hasty drying such line might be wrapped around a [illegible]. From fully tanned and [462] smoked hide came smoked-skin line, of whose manufacture little need be said. Men collected the roots for spruce-root cordage but all subsequent stages of manufacture were carried out by women who scraped the roots with a stone knife and then boiled them for about half an hour. The worker then split each root, smaller ones being split only once but very thick roots four times. Occasionally spruce roots were braided. This line kept best when loosely hung up and tended to spoil if wound tightly. When spruce roots became hard and dry, they could be softened with grease but urine was never used for this purpose. Whole willow line, made in emergencies to pack meat, consisted of a long willow branch softened by heating over fire and then twisted until the fibers had been well broken. Willow bark line found a host of uses and yielded material for fish nets. Willow roots, collected by men, were softened through an hour's boiling, split, and then used for cordage. To manufacture grass line women gathered the high sedge growing along lake shores. Bundled into sheaves for transportation back to camp, the material had to be fabricated quickly before it dried. Twisting converted the grass into line that remained useful for only a short period of time. When confronted with the information that the Tahltan had woven goat's wool into blankets our informant (O) opined that the Kaska must have done the same thing.[9] Among the knots commonly applied to the 284 foregoing types of cordage are the running noose, bowline, and overhand. Two ends of babiche were spliced by means of a sheet bend.

412 *Dease River Kaska.* Stone tools constituted the basic equipment in the Dease River area. A flintlike stone as well as obsidian provided materials for blades which were then 324 lashed to handles of horn or spruce and birch wood. Sinew or babiche line secured the ● 281 lashing. To protect blades men or women manufactured scabbards from smoked caribou hide. The container [illegible] carried under the outer belt of a person's garments. Although a woman had her own knife its form did not differ from the man's and the objects were [289] designated by a common term. Before beginning to chip stone a man might swing a bullroarer while repeating the song, "chosela, chosela." The charm caused his magical power to aid him in the work.

323 Concerning work in clay, we found it impossible to check the testimony of one informant (E) that vessels used to be shaped from this substance and hardened by firing.

321 The caribou or goat's horn adze served as a knife tool for woodworking and stone 401 axes were denied. Men split logs with wooden wedges and used spruce [illegible] tools to render them in [illegible] [illegible] back.

321 Bone constituted an important material for knife blades, the material being "sharpened" 402 to an edge and lashed in a horn or wooden handle. Women used skin fleshers derived from the leg bone of the caribou as well as obsidian scrapers for removing the hair of a hide. Sewing needles of fish bone are said to have been of recent introduction, supplanting bone awls. Unprocessed moose horn provided an ice chisel as well as material for

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[9] Teit, On Tahltan (Athabaskan) Work (1912), 485.

Upper Liard
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Tselona
Frances Lake

fish spear tines. After being softened by boiling caribou horn could be shaped into spoons with the aid of a stone knife. Several implements utilized teeth. A skin scraper consisted of four beaver teeth set in a wooden handle and secured with babiche line, while a beaver- or porcupine-tooth awl permitted drilling in wood. Men mounted two beaver teeth in a wooden frame for use as a drawknife or chisel. 321/412

The processing of animal skins constituted one of a woman's major tasks. After a preliminary smoking the worker rubbed the skin with a mixture of caribou brain and animal grease. She left the hide to soften for three days and then washed it in water. Afterwards it was kneaded with the fingers and scraped on a frame with a softening stick that carried a stone blade. Following another soaking in the brain mixture the process was repeated one or more times before smoking. Use of urine in tanning was not admitted. 281

Animal hides at various stages of processing, along with various vegetable products, provided materials for cordage. Types of line included sinew, rawhide, semi-tanned hide, smoked (tanned) skin, spruce root, twisted grass, and willow bark. Although in a somewhat different category, the wristlets made by twisting eider-duck feathers may also be mentioned here. Fish-skin line and spruce-wood cordage are explicitly denied by contemporary informants. Strong rawhide came from bearskin and, like caribou rawhide, served for packing. Caribou and beaver (?) pelts provided babiche, while in an emergency strong packing line that remained useful for relatively limited periods could be fabricated from willow bark.[9] Grass-woven baskets had been heard about by a Dease River informant. They were manufactured in summer by women as receptacles for storing food and other materials. Grass mats met with no recognition. 283 [287] [285]

Tselona. The formerly Kaska prepared a needle with an eye from a marten bone. Although not certain of the kind of bone used, the informant would not assent to the suggestion that it might have been a goat bone. 321/412

Frances Lake Kaska. A traveler's mention of "ropes" of goat's hair among the Frances Lake Indians is evidence of the processing of goat's wool and its probable use in weaving.[10] 286

FOOD—ITS COLLECTION, PREPARATION, AND EATING

Upper Liard Kaska. The aboriginal Kaska community took many of its cues from the seasons, whose perpetually recurring cycle accompanied notable changes in the habits and condition of the animals on which the people depended. In late summer, when game had fattened, hunters and their families moved into the mountains in pursuit of the goat, sheep, caribou, gopher, and ground hog. People thought of the long, lean seasons of winter as the women busied themselves drying meat and cooking it for future consumption. Meanwhile men readied snowshoes, toboggans, and walking sticks. When the snow became deep and the severe cold began to set in the families gathered together around a fish lake where, a little like some of the other animals, they "hiber- 221

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[9] One informant reported that among the Bear Lake Sekani line was cut from rawhide, semi-tanned skin, and smoked skin. Demonstration by another informant from this group revealed one of the lanyards for splicing was made of babiche.

[10] Dawson, Frances Lake, Yukon (1888), 75.

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321 Bone for tips came from the lower hind leg of the caribou or moose. Eagle feathers, procured from the bird's nest, made the favorite vanes, although arrows for grouse and spruce hens might be tipped with feathers from owls. Crow feathers were avoided, it being said that they made too much noise. After being split, the feathers were glued to the shaft with spruce gum and secured with sinew line. Then each feather was trimmed to a graceful arc. Two as well as three-feather vanes occurred. In the latter the vanes always lay on three sides of the shaft, never were two vanes located on top. To contain arrows, women manufactured quivers of tanned moosehide, three feet long and six inches in diameter, decorated with beads and porcupine-quill embroidery. Shoulder straps also carried embroidery. Two compartments in the container separated bird from larger game arrows, both types being inserted into the quiver point first. A birch-bark bottom prevented the sharp points from piercing the hide. A man always wore his quiver under the left arm, shoulder quivers being unknown. When standing on land the hunter held his bow in an absolutely vertical position. In a canoe as well as when kneeling on land, he employed the weapon horizontally. The first and second fingers pulled the arrow. Use of the third finger to grasp the bowstring (i.e., the Mediterranean type release) was not admitted.

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411 Spears, serving as war and hunting weapons, measured from five to ten feet in length and were fitted with flint points or with sharpened, caribou-horn blades. Larger spears, used against bear and caribou, carried only flint points. Gaff hooks were of bone. Slings, employed in hunting small game, enjoyed greater use as toys than as serious weapons. From wood and caribou horn men shaped clubs used, for example, against the bear and porcupine.

224 Hunting techniques sometimes required the hunter to wait in ambush for an animal to come within range of his weapon. At other times a man was obliged to drive, track, or pursue game. An example of the first mentioned type of technique is seen in the erection of the "bear trap," constructed when the people "really wanted a bear." A conical structure with an entry big enough to admit a bear was located in the bush and covered [illegible] with a fire. The hunter spread animal fat around the shelter and then, armed with a heavy, caribou-horn club, retired inside to wait. Frequently, if the man's plans were realized, a bear came around, attracted by the smell of the grease. As soon as the animal put its head into the structure the man struck. The [illegible] After dragging the carcass into the shelter the Indian waited on in the hope of a second bear visiting. Sometimes cubs followed a female into the ambush.

Another kind of decoy is seen in connection with hunting caribou in winter. A hunter spying caribou on a lake might fashion a decoy by spreading a caribou skin across a willow-pole framework. [illegible] on one side, the hunter hid a short distance away. The animals, their curiosity aroused, came to investigate the decoy and so ventured within range of the man's weapon. Game birds were also hunted from ambush. For

223 grouse and spruce hens an Indian selected a willow pole about 12 feet long and cleaned it of bark. At the end he provided a noose of split spruce line. With this implement he crept close to the birds, endeavoring to slip the noose over an animal's head, whereupon

8: Honigmann E-5 (1943-1945)1954 ND12 Nahane ND12

Frances Lake
Upper Liard

080 informants, who were young men with records of considerable time spent in the Liard Valley. It is likely that the patterns already presented also largely obtained in the Frances Lake area.[9]

TRAVEL AND TRANSPORTATION

484 *Upper Liard Kaska.* Foodgetting among the Indians of the taiga depended thoroughly upon mobility. Although a little travel occurred for other purposes, two main patterns of mobility may be distinguished. First, groups of people moved with their belongings to various parts of the tribal territory in search of new food resources to exploit. Such travel took place, for example, in the fall when the population moved to the mountains and again in early winter when they journeyed down to fish lakes. Second, there took place a great deal of "short term" travel, required of men pursuing game or of women visiting fish nets and berry patches. The Indians remained mobile in every season but the techniques of travel differed to a considerable extent between winter and summer. With snow on the ground and bodies of water covered with ice the toboggan and snowshoe provided the basic travel aids while in the season of open water travelers relied on the canoe, paddle, and raft. [489 501]

493 281 Animal skins as well as wood were utilized for toboggans. Beaver skins prepared with the hair turned well for traction, the smoothness of the pelt aiding their easy passage over the snow. Three such skins sewn together constituted a good sized vehicle. A number of skins from the hind legs of moose or caribou might also be sewn together with sinew to make a toboggan six feet long and two feet wide. To hold goods securely the rear portions of skin toboggans were stitched "like a baby bag." Prepared by a woman, a skin vehicle would last a winter or even two if stored in a dry place when the snow began to melt. A man manufactured undecorated wooden toboggans, tamarack being the preferred material. After splitting the green wood with a wedge he planed the boards with his crooked knife. Wood from the exterior section of the tree bent most readily, the bending process being accomplished by moistening the lumber with warm water and then forcing the board back "against a pole."[10] The running boards were sewn to cross 493 332

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[9] Similar patterns are reported for the Pelly River people by Field, who says, for example, that the Pelly River people moved into "a good game country about the end of August when all game is fat, to dry up a cache of dry meat for the winter months." [illegible] The Indians of the Ross and Pelly valleys subsisted primarily on meat and fish; they "used bows and arrows to hunt with, spears, snares, deadfalls, etc. They would make long fences when the caribou and sheep were [illegible] of the mountains. They would leave spaces big enough for a caribou or sheep to go through in their fences and put snares in them. Whenever a herd was sighted they would try to surround them and drive them through their fences." [illegible] "[illegible] and kill them with a club." [illegible] (Field, Unpublished manuscript [1914]). An Upper Liard informant [illegible] the Ross River Indians [illegible] too strong for the taste of the Liard River people. [462]

[10] The method of [illegible] was reported by a Frances Lake Indian in 1945. See Honigmann, *Culture and Ethos of Kaska Society* (1949), 40, 53-54, also Pl. 6, c and e.

& Honigmann E-5 (1943-1945)1954 ND12 Nahane ND12

Tsalona
Espatotena
Upper Liard

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dwelling people lived on the spruce-brush carpeted ground and slept under blankets of woven rabbit skin or stitched ground-hog pelts with tanned-skin pillows stuffed with feathers. The strike-a-light method provided fire and was used in conjunction with a fungus that grew on birch trees, from which tinder was prepared. Informants mentioned the fire drill but its use appears to have been relatively recent. Travelers in both summer and winter carried fire on glowing poles, the only type of fire carrier admitted. 342 513 372

Espatotena. From a trapper operating in the South Nahani drainage Godsell heard of a cave " 'cut from the rock half-way up the face of a hundred foot precipice that spans a two-thousand-foot valley. It was about eighteen feet by twelve, with a hole running straight up through the rock, which must have been a sort of chimney.' " Two additional caves were also reported " 'chiselled from living rock by human hands.' "[8] While the construction of rock shelters by stone-tool using aborigines may be questioned, the use of cave shelters seems very plausible and is in fact corroborated by data we ourselves obtained as well as by other investigators. Dr. Wesley Bliss of the University of New Mexico entered the South Nahani country in 1938 and reports on cave habitations.[9] 342

DRESS AND ADORNMENT

Upper Liard Kaska. Camp provided the place where the Kaska woman manufactured clothing for her husband, children, and herself. Tanned caribou skin comprised the principal material which was sewed with the aid of sinew line and bone needles pushed with a flat piece of bone held in the palm of her hand. Women used a work board when cutting the patterns of moccasins and mittens. Small sewing implements not in use were kept in a fish-skin bag. During cold weather fur robes supplemented tanned-skin garments. These had been tanned by women workers or else been plaited from strips of rabbit, ground-hog, or gopher skins without the aid of a frame. Body parts served for measuring clothing materials. 291 462 281

In summer each sex wore a tanned-skin breech cloth supported from an inner belt, a tailored coat or frock with sleeves reaching to just below the elbow and girdled by a belt of tanned skin or woven porcupine quills, trousers of the same material suspended on the hips from the inner belt, and moccasins. In winter certain adjustments were made to this basic dress, mainly through the use of additional garments. The breech cloth became a length of plaited rabbit skin, while over the coat both sexes slipped a parka made of smoked caribou skin or of sheep skin tanned with the hair on. The parka reached to the middle of the thigh and splits on both sides of the lower edge were provided with a lacing that could be tightened to insure a snug fit. Parka sleeves sometimes continued 291

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[8] Godsell, *Romance of the Alaska Highway* ([illegible]), [illegible].

[9] From the Pelly River country Field reports that the Indians "years ago lived in open camps sheltered on three sides by throwing up sticks and brush." A fire was located in front of these lean-tos which were [illegible] (Field, Unpublished manuscript [illegible].) In [illegible] Schwatka reported he found a village below Fort Selkirk (Tutchone area) that a few Indians had built log cabins "of the most squalid and wretched character, which they leave in winter for the better protection of the [illegible]." There is nothing to suggest that these log houses are aboriginal. The [illegible] [illegible] of [illegible] [illegible] covered with a double layer of skins and banked with snow. Schwatka, *Report on a Military Reconnaissance made in Alaska in [illegible]* ([illegible]), [illegible].